

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

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Group Art Unit: Unknown

Examiner: Unknown

Atty. Dkt. No.: ESSR:057US

Serial No.: Unassigned

Filed: Concurrently Herewith

For: PROCESS FOR OBTAINING A
PHOTOCHROMIC LATEX

EXPRESS MAIL MAILING LABEL

NUMBER EL 780049049 US

DATE OF DEPOSIT November 16, 2001

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Applicants respectfully submit this Preliminary Amendment in the above-referenced case.

Consideration of this case in view of the amendments made herein is respectfully requested.

AMENDMENT

In the Specification:

Please amend the specification as follows:

At page 1, line 1, please insert the following paragraph:

--This application claims priority to French Application No. 00/14903 filed 17 November 2000.--

In the Claims:

Please cancel claims 1-12, without prejudice or disclaimer.

Please add new claims 13-30 as follows:

- 13. (New) A process of obtaining photochromic latex comprising:
preparing a mixture comprising at least one organic monomer Z, which monomer comprises at least one C=C group and is polymerizable by a radical process, at least one organic photochromic compound, at least one surfactant, water, and a polymerization primer;
forming a miniemulsion of the mixture, the miniemulsion comprising an organic phase dispersed in an aqueous phase;
polymerizing of the reaction mixture, and
recovering photochromic latex.
14. (New) The method of claim 13, wherein the polymerization primer is mixed with the other components of the mixture before formation of the miniemulsion.
15. (New) The method of claim 14, wherein additional polymerization primer is added to the mixture after formation of the miniemulsion
16. (New) The method of claim 13, wherein the polymerization primer is mixed with the other components of the mixture after formation of the miniemulsion.
17. (New) The process of claim 13, further comprising degassing miniemulsion before the addition of the primer.


18. (New) The method of claim 13, wherein the polymerization primer is added to the mixture during the formation of the miniemulsion.
19. (New) The method of claim 13, wherein the organic phase is dispersed in the aqueous phase in the form of droplets having a diameter of 50 to 500 nm,
20. (New) The method of claim 19, wherein the organic phase is dispersed in the aqueous phase in the form of droplets having a diameter of 50 to 300 nm.
21. (New) The process of claim 13, wherein the organic monomer Z is an alkyl (meth)acrylate.
22. (New) The process of claim 13, wherein the photochromic compound is a chromene or spirooxazine.
23. (New) The process of claim 13, wherein the Z monomer is an alkyl methacrylate and the photochromic compound is a spirooxazine.
24. (New) The process of claim 13, wherein the mixture further comprises at least one stabilization agent.
25. (New) The process of claim 24, wherein the stabilization agent is an n-alkane, a halogenated n-alkane, a fatty alcohol, or an ester of a fatty alcohol.
26. (New) The process of claim 25, wherein the stabilization agent is hexadecane, cetyl alcohol, or stearyl methacrylate.
27. (New) The process of claim 13, wherein the polymerization primer is soluble in the aqueous phase or in the organic phase.

28. (New) The process of claim 27, wherein the polymerization primer is azobisisobutyronitrile or 2,2'-azobis (2-amidinopropane) dihydrochloride or sodium persulfate.
29. (New) The process of claim 13, wherein formation of the miniemulsion comprises passing the mixture through microfluidiser.
30. (New) A photochromic latex prepared by a process comprising:
preparing a mixture comprising at least one organic monomer Z, which monomer comprises at least one C=C group and is polymerizable by a radical process, at least one organic photochromic compound, at least one surfactant, water, and a polymerization primer;
forming a miniemulsion of the mixture, the miniemulsion comprising an organic phase dispersed in an aqueous phase;
polymerizing of the reaction mixture, and
recovering photochromic latex.--

REMARKS

The specification has been amended to recite the priority data, to cancel claims 1-12 of the prior application, and to add new claims 13-30. Support for the new claims is found in the specification and claims as originally filed. The filing fee has been calculated after amendment of the claims by the preliminary amendment. For the convenience of the Examiner, a clean set of the pending claims is attached hereto as Appendix A.

Figure 1 displays 12 histograms, labeled (a) through (l), showing the distribution of the number of non-zero elements in the vector x_k for $k=1$ to $k=12$. The x-axis represents the number of non-zero elements (0 to 10), and the y-axis represents the count (0 to 10). The distributions are roughly bell-shaped and centered around 5, with the peak count increasing from 10 for $k=1$ to 12 for $k=12$.


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Date: November 16, 2001

APPENDIX A

Pending Claims

13. A process of obtaining photochromic latex comprising:
preparing a mixture comprising at least one organic monomer Z, which monomer comprises at least one C=C group and is polymerizable by a radical process, at least one organic photochromic compound, at least one surfactant, water, and a polymerization primer;
forming a miniemulsion of the mixture, the miniemulsion comprising an organic phase dispersed in an aqueous phase;
polymerizing of the reaction mixture, and
recovering photochromic latex.
14. The method of claim 13, wherein the polymerization primer is mixed with the other components of the mixture before formation of the miniemulsion.
15. The method of claim 14, wherein additional polymerization primer is added to the mixture after formation of the miniemulsion
16. The method of claim 13, wherein the polymerization primer is mixed with the other components of the mixture after formation of the miniemulsion.
17. The process of claim 13, further comprising degassing miniemulsion before the addition of the primer.
18. The method of claim 13, wherein the polymerization primer is added to the mixture during the formation of the miniemulsion.
19. The method of claim 13, wherein the organic phase is dispersed in the aqueous phase in the form of droplets having a diameter of 50 to 500 nm,

20. The method of claim 19, wherein the organic phase is dispersed in the aqueous phase in the form of droplets having a diameter of 50 to 300 nm.
21. The process of claim 13, wherein the organic monomer Z is an alkyl (meth) acrylate.
22. The process of claim 13, wherein the photochromic compound is a chromene or spirooxazine.
23. The process of claim 13, wherein the Z monomer is an alkyl methacrylate and the photochromic compound is a spirooxazine.
24. The process of claim 13, wherein the mixture further comprises at least one stabilization agent.
25. The process of claim 24, wherein the stabilization agent is an n-alkane, a halogenated n-alkane, a fatty alcohol, or an ester of a fatty alcohol.
26. The process of claim 25, wherein the stabilization agent is hexadecane, cetyl alcohol, or stearyl methacrylate.
27. The process of claim 13, wherein the polymerization primer is soluble in the aqueous phase or in the organic phase.
28. The process of claim 27, wherein the polymerization primer is azobisisobutyronitrile or 2,2'-azobis (2-amidinopropane) dihydrochloride or sodium persulfate.
29. The process of claim 13, wherein formation of the miniemulsion comprises passing the mixture through microfluidiser.
30. A photochromic latex prepared by a process comprising:

preparing a mixture comprising at least one organic monomer Z, which monomer comprises at least one C=C group and is polymerizable by a radical process, at least one organic photochromic compound, at least one surfactant, water, and a polymerization primer;

forming a miniemulsion of the mixture, the miniemulsion comprising an organic phase dispersed in an aqueous phase;

polymerizing of the reaction mixture, and

recovering photochromic latex.

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